

MODIS Snow and Ice Project
MODIS Quarterly Report
Reporting Period: July - September 1996
Submitted by: D. K. Hall/974

SUMMARY

The primary activity during this reporting period has been to update the ATBD. This is due on 1 November 1996. It is requested that interested people read the updated ATBD after 1 November. Because of this deadline, and the fact that the details are in the ATBD, this report will be very brief.

Activities during this quarter included acquiring the calibrated MAS data from the MODIS Project between the months of August and October. Preliminary analysis has begun and is reported in the ATBD. Early results show that the data from the 25 reflective bands look reasonable. Thus far, a negligible effect of view angle on snow reflectance in flat terrain has been found.

Dr. Andrew Klein has recently joined the group. He received his Ph.D. from the Geology Department at Cornell University. He has applied for a USRA post-doc position. Currently he is on contract with General Sciences Corporation. His experience includes work on mapping glacier snowlines in the Andes Mountains, and mapping snow cover using a variety of remote-sensing techniques.

Version 1 of the MODIS data product algorithm codes for MOD10 (snow) and MOD29 (sea ice) were delivered in August.

SOFTWARE DELIVERY

Version 1 of the MODIS data product algorithm codes for MODIS snow cover (MOD_PR10) and MODIS sea ice cover (MOD_PR29) and supporting documentation for each were delivered in late August to the SDST. Codes were compliant with ECS and SDST software standards for Version 1 code. (Formal acceptance of the codes was received on 8 October 1996.)

SOFTWARE DEVELOPMENT

Coding has begun on the MODIS ice surface temperature algorithm. MAS data are being used in development of this algorithm.

APRIL 1995 ALASKA MISSION/ANALYSIS OF MAS DATA

Preliminary data suggest that the MAS data in the 25 reflective bands are good. Results show reflectances from snow on the North Slope of Alaska, acquired on 3 April 1996, vary from about 85 percent to about 5 percent. Reflectances of snow in forested areas vary from about 35 percent down to about 0 percent. No observed, significant change in reflectance across the scan ($\pm 43^\circ$) has been observed in preliminary analysis of the reflectance data from the North Slope. No data covering the entire scan has yet been found of the forested areas in order to determine the change in reflectance across the scan in the forested areas.

In terms of the analysis of the MAS data, this is our highest priority right now. We plan to study the angular changes in reflectance in different cover types (tundra, muskeg, forest, etc.), and the reliability of the algorithm over partially-snow covered areas. Registered MAS and DEM data will reveal reflectance changes due to topography. The effects of this will be investigated in terms of the results of the snow-mapping algorithm.

PUBLICATIONS, MEETINGS AND CONFERENCES

The following MODIS-related meetings have been attended:

19 July 1996 Cloud-masking workshop, Langley, VA (D. Hall, G. Riggs)

9-11 October 1996 MODIS Team Meeting (D. Hall, G. Riggs)

George Riggs presented a talk at the MODIS Algorithm Developer's Forum on October 9, 1996, entitled, "Version 1: Lessons Learned."